Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

The American Midland Naturalist

PUBLISHED BI-MONTHLY BY THE UNIVERSITY
OF NOTRE DAME, NOTRE DAME, INDIANA.

VOL. III. MAY, 1914. NO. 9.

FOREST ARBORETA.*

BY MR. CHARLES M. DOW.

I am to have the privilege of talking to you about forest arboreta. I shall extend that privilege somewhat, and talk a little about forests and forestry as well.

A practical man would satisfy himself as to the reasons for doing a thing before he considered the method for doing it. Before we take up the question of the method of establishing a forest arboretum, let us first see whether such an object lesson in forest planting is necessary or desirable.

A lecturer in the science of medicine would not be likely to impress or properly instruct his students, did he talk glowingly about the hospitals, but omit all reference to the patients them selves. And I think we would all be disappointed, if we attended a lecture on scientific farming and listened to a lengthy dissertation on hoes and plows, and rakes and fertilizers—and heard not a single word about seeds and crop yields, and how to harvest them.

It is the same with forestry. Before a man talks about an arboretum. or about sylviculture, or forest management, or forest utilization, or before he advises others to practice them, he should be wholly sure in his own mind that all these things are wise and necessary and wholly practicable. I want to make this point very clear—the need for being sure about the justification and the need for doing the thing before we talk about the method of doing it.

---

* Address given at the meeting of the New York State Foresters' associotion, held in New York, January 24, 1914.

Mr. Dow is superintendent of Letchworth park and his work has attracted so much attention that he is frequently in demand as a speaker on forestry.

Suppose a man, a wise man, thinks of building a house—does he go right to employing an architect and buying brick and lumber, and hiring men, or does he go straight and hunt up a reliable contractor? I think the wise man first says to himself: "Can I afford to build this house? What can I spend on it? What are our needs for rooms? When is the best time to begin?" And then and only then he begins to think about how to build.

Or think of the artist with his camp stool and his easel, who faces some wide sweep of coast and sea, or mountains wreathed in clouds, or a similar and more intimate bit of Nature's handiwork—a babbling mountain stream perhaps, or a patch of wild flowers in the foreground and blue mountains in the distance. Does the artist set right in to mixing his paints and sketching in the picture? First he asks himself: "Is there a picture there? Does it compose? Does it tell a faithful story as true pictures do?"

I am not a professional forester in the technical sense, but a business man who has dealt in private and some public affairs, an American citizen, and therefore deeply interested in the forest and its welfare. I did not become enthusiastic over forest arboreta in general and over one forest arboretum in particular until came to realize that such object lessons were greatly needed to help bring this whole great principle of practical forestry into effect.

First, however, I had to convince myself that practical forestry was needed in America. I looked about me, and I travelled. I travelled somewhat widely. And the more I looked, the more I saw—apart from all matters of statistics—that wherever trees are, men follow. And I saw that these men, this army of loggers, which contains no fewer numbers than the army of the United States, is busy everywhere. For the loggers are busy in the resinous snow-laden north woods and in the forests of the Lake states. They are busy in the Rocky Mountains from Montana to Arizona, among the Lodgepole and the Western yellow pine. They are busy among the great red fir and cedar and sugar pine of the Pacific forests. And the size of this army of loggers grows steadily with the years.

So different are the conditions under which the loggers work, that some of them have to wear the warmest clothes to be had as a protection against the northern cold. Others work stripped to the waist in the southern pine woods. Others again, are clad in homespun, and crack long whips over the slow-moving oxen, as they snake the big logs of oak and chestnut and poplar out of the rich coves of the Blue Ridge. It is a varied army of loggers, facing many different conditions in this great country of ours. French-Canadians, Americans, Irishmen, Scotchmen, negroes, Indians, mountaineers and plainsmen, go to make it up; and the army is fighting forests quite effectively. And you will readily realize that the lumber cut in one year in the United States would make a row of wooden houses more than ten thousand miles long, or about the same distance as the mail route from New York to Hong Kong.

But, while lumbering is interesting and even picturesque to watch, while it is varied in its methods, ranging from steam skidders to the aerial tramways, to the logging railroads, and to river driving, and while each method has its elements of interest; still, the thing which counts most is not just how the loggers do their work but what results they leave behind.

I hold no brief against the lumbermen. They have been pioneers in industry. They have added greatly by their initiative, their abilities, and their remarkably skilful methods in turning forests into lumber and lumber into money, in the material development of these United States. But in the woods work they have done, their last thought as a rule has been the safety and perpetuation of the forest. The result has been to devastate some one hundred million acres of forest land in America. This land has been stripped so clean by careless use of the axe and the saw and the following fires, that trees must be planted by hand upon this vast area to bring back a commercial forest upon it, and thus to restore it to productive use.

We do not need to go far from home to see this waste. We have it at our doors, right in the Adriondacks. Some one has made the forceful statement that forestry is practical in the Adriondacks everywhere except right in the woods. I realize that here and there Adriondack forest owners have turned their thoughts to thrift., But on the whole the Adriondack forests are not being perpetuated or improved by careful utilization, but are being destroyed by reckless use.

This matter you all understand so well, it seems to me a matter not merely of science and theory and technique, but a matter of the common variety of common sense. As you are possibly aware, I am a banker, somewhat interested in lumbering and farming. Bankers get into the habit of dealing not much in glittering generalities as in contrasting concrete cases with tangible results—things so concrete and tangible, for example, as capital and interest.

Let us apply the same wholesome standard and measure to this question of forestry. I hardly need to argue, at least not here, that forests are essential to all human welfare. Next to our need of food, comes our need of timber. And forests not only yield timber but they yield water as well; water for domestic use, for power, for irrigation, for every useful purpose known to man. Not only do forests render these two great services to mankinfd but they harbor game, they make the world beautiful, and they upbuild, as all history drives home the fibre, health and happiness of all human beings.

So I think that we may fairly assume that forests are needed. Now if they are needed, what is the common sense in utterly destroying them, or partly destroying them, or reducing their yield, and consequently reducing their usefulness to men? I am inclined to think that part of the reason why forestry is adopted so slowly by private owners in America, part of the reason why forestry is still looked upon by many as an obtruse science, is that it is not yet generally understood that forestry is the further application to the woods of the great basic principle of agriculture. The principle of so raising and tending crops and so husbanding the land, as to keep the land productive for all time.

I do not need to delve into statistics. You know how this nation stands, with respect to her forests. The forest is capital. The yearly growth is the interest thereon. That growth can be measured and taken just as can the interest from capital invested as money instead of as trees. This nation, as you are aware, has thrown away all considerations of the safety of the capital, and is rapidly spending both interest and forest capital about three times as fast as the forests grow. Our yearly use of wood in the United States is about three times as fast as wood is being produced in all our forests.

Such a procedure would not work in banks. I hardly need to tell you that it does not work well for a nation which will need wood and timber, and running streams, and all industries dependent upon the forest so long as the nation stands.

Where is the remedy for this wastefulness? For this obliviousness to the future? For this feverish appetite for wood, about twenty times as great per capita as that of the great nations of Europe. Where lies the remedy for this—what shall I say—for this somewhat perverted, artificially stimulated appetite? What are the methods under which our forests may be made not only storehourses, but factories of wood? Three great forces must work together to save our forests—the nation, the states and individual citizens. No one force can in time accomplish adequate results in forest conservation.

Assuming effective co-operation between these three great forces, these are the things Americans need to do: First, to protect all forests from fire. That is the fundamental thing. The first duty of any man to whom is entrusted the funds of other men is to see to it that they are made safe, so far as safety is humanly possible. Our first duty towards the forests is precisely the same duty. To make them safe not only from destructive logging, but first of all, to make them safe from their arch-enemy—fire. Once that is done, once that great step is fully taken by co-operation between the states and the individual land owners—the nation already has its rangers in the national forests to man the fire lines—once that essential step is taken, the next step is right methods of forest management. I hold the conviction that foresters have kept this matter of forest management, this matter of practical sylviculture which is what your forest management really is, a little too guarded from the public mind. For though he be a layman, as soon as a man conceives the basic idea of what sylviculture means, then if he be reasonable he can no longer oppose its application or fail to appreciate its obvious benefits.

To me, one of the most inspiring phases of forestry is the way in which the forester acquaints himself with the complex and many-sided life of that city of trees, which is what the forest really is. The way in which he looks upon the trees, a good deal as masters of men must look upon the people whose energies they direct. The way in which he studies the fighting qualities of the trees, which is what the sylvicultural characteristics really are, and so designs his forest methods, so fixes diameter limits of cutting, so provides for protection of young growth, so reduces lumbering to a careful, culling process, that the whole struggle for existence in the forest is directed and guided to useful and productive ends.

I trust I am not a fanatic on the subject of Forest Aboreta. Perhaps I realize no less clearly than you do, that forest conservation in America depends chiefly upon reproduction from self-sown seed, following careful and conservative cuttings. But I also realize that before our National Forest problem is adequately solved, before we have put to use, and to the best use, every acre of land in America—and we shall not stop our efforts until then—that we must undertake and carry out a national task in forest planting, which is vaster than the same task which any other nation has ever faced.

In regard to tree planting, the United States naturally falls into three regions—the Eastern, the Central and the Western. The Eastern region is that one which lies east of the great prairie states. In it is a vast aggregate of denuded lands suitable only for forest growth on which as the result of repeated fires following logging, natural reproduction has not and probably will not take place. Cut-over and burned-over lands in urgent need of forest planting in the Atlantic region, and in the northern portion of the northern states, alone aggregate over three and one-half million acres.

Then there is the great area of abandoned farm lands, mainly in New England and in the southern mountains; and then there are the wood lots rendered unproductive by missue, on which planting is essential to bring back the forest crop.

The Central region comprises the prairie country. Tree planting is urgently needed there to protect crops from wind, to grow timber for ordinary farm purposes in a mainly treeless country. In the far west the planting problem is mainly federal and on it a good beginning has been made.

To sum up, without going too deeply into the dry realms of figures and statistics, we have planted in the United States just about one acre in every ten thousand acres thus neglecting our duty to ourselves and those who follow us, to plant forest trees.

There is the task. Now what is needed for its accomplishment? As I see it, these are the main things: A much more wide and more definite knowledge on the part of the landholding citizens of the returns and profits which follows tothose who plant forest trees. Mention tree planting to the average man, and what is his response?

"Plant trees," he says—"Why I can't wait that long for my returns! Tree planting is all very well for states and govern; ments but I am merely a man with a little span of life ahead of me. When I invest I must at least live long enough to harvest the crop."

You see that such men are apt to think not in terms of white pine, which, as you are aware, will yield box boards in something less than 30 years, or in terms of the quick-growing hardwoods which yield fence posts in eight or ten years and firwood in maybe ten more, and lumber in perhaps 30 or 40 years. Most men are apt to think of the results of tree planting in terms of long lived, slow growing oaks, which take perhaps a century to grow 12 inches through. To make the fact plain to such men, not only about money returns from tree planting but about how soon these returns can be had, is an urgent task before all foresters.

Now the next task. That is to get tree planting done so well that disappointment will not be the crop instead of posts or lumber or firewood. Successful tree planting is a wholly practicable thing. The Germans have demonstrated that fact for well over two centuries; and of course being foresters, you are well aware of the fact that today one-third of the reproduction in German forests is from planted trees.

But we do not need to go to Germany. Go to Baltimore, North Carolina, to the estate of George W. Vanderbilt. You will see forest plantations there, growing on steep hills which 20 years ago were bare and red and gullied by erosion and which today are already yielding useful products. If you do not care to go so far, why then travel in your own state here at home, and see the admirable results already obtained by planting good forest stock from the splendid state nurseries.

Successful tree planting is a practical thing; so is successful farming; but there are farmers who fail. Now what is needed in order to insure as low a precentage of failure as possible among tree planters? My impression is that object lessons are needed more than anywhere else. One can not learn how to be a forester from books alone. I will affirm with equal vigor that one can not learn how to be a banker from books; and possibly we will agree that men can not learn how to do good tree-planting wholly from books. They need to see the thing in operation. Of course the obvious answer is, as I have just stated, that successful plantations are to be seen in New York state and elsewhere in America.

But, can you conjure up a life-sized picture of an up-state farmer, a thrifty, cautious farmer, travelling east and west and north and south, and spending largely of his means to see plantations which contain the trees he wants or the trees which he should or might or could consider setting out on his worn-out lands, or in his woodlot, or elsewhere where trees are needed on his farm?

You might say: "Why are forest arboreta needed? There are a great many arboreta which contain practically every kind of useful tree. Let the prospective tree planter inspect those.

There are such arboreta at Harvard, and elsewhere. Deep and undying credit and honor is due to Dr. Sargent and the other eminent gentlemen who established them. They serve a most valuable purpose to landscape architects, to foresters, to land owners and to all classes of men who wish to study the habit and behavior of individual trees, but they are not planted in forest conditions.

I have made some study of arboreta around and about the world. I think I may say I have seen with some degree of thoroughness nearly all the great tree arboreta of the world, both in America and foreign lands. I do not need to recount to you who are foresters the wonderful living museum of trees in the Arnold abroetum nor do I need to describe the great arboretum in Kew Gardens, near London, where many foresters have worked, including possibly some of yourselves; nor do I need to describe the great arboreta in semi-tropical countries, as in Ceylon on the Island of Java, or which are in the making in several other foreign lands.

I am thankful as an American citizen for the Arnold arboretum and for all such wonderful and useful evidences of the great ability and devotion of scientific men. In promoting, as we have done, the establishment of forest arboretum at Letchworth Park I feel we are simply carrying the arboretum idea to a further progressive development. For I am convinced we should have here in America, not only tree arboreta, but a forest arboretum—not only one, but many.

My old friend, William Pryor Letchworth, a man of character and of great service to mankind, spent his leisure moments throughout a long and busy life in beautifying and developing his estate upon the banks of the Genesee river near Portage, about 60 miles from Buffalo. In the twilight of his life, Mr. Letchworth felt more and more the need for forest conservation. And through his wide vision and his great generosity, he left Letchworth Park to the people of New York as a public park; and he left a very definite request that it should be used, so far as practicable, for purposes of useful and educational afforestation, and he also left the means for its accomplishment.

I shall always remember my talks with Mr. Letchworth on this subject. And it was with a vigor inspired both by my friendship for him and by my contempt of the great needs of such an object lesson in tree planting as the custodians, The American Scenic and Historic Preservation society, are now establishing at Letchworth Park, that I have devoted all the time I could to the development both of the forest arboretum idea and of the work itself upon the ground.

Our purpose is to develop the forest arboretum at Letchworth Park deliberately—forest arboreta do not spring up like mushrooms over night—and in doing so establish a great object lesson for this region, illustrating the results of forest planting. We wish to see established at Letchworth Park—and a small but satisfactory beginning has already been made—blocks of planted forests seldom left less than an acre in extent, and each containing a useful tree or a useful combination of trees which will grow in that vicinity. We want foresters, farmers, landscape gardeners and tree planters, present or prospective, to go to Letchworth park, to walk among these planted blocks of forests, to make a right selection for their uses; and then to go home and plant forest trees themselves.

At the inception of the movement the principle upon which the Letchworth arboretum was to be established and certain plans for carrying out the principle were adopted by the Custodian society. This principle and these plans are in part as follows:

"The principle upon which the Letchworth arboretum be established is that it shall consist of a permanent collection of the various species of the world's timber trees likely to thrive in this northern climate, planted scientifically to test their value and illustrate their processes of development, thus supplying not only knowledge for knowledge's sake, but also knowledge for practical use.

In carrying out that principle we will have a collection of the valuable timber trees of the world and the Letchworth arboretum will become the first of its kind, and its contribution to the cause of forest conservation in the United States will be of great economic and scientific value.

After the arboretum has been established, planted singly and in groups will be every important tree species with which experiment under local conditions of soil and climate will justify, and visitors will thus have ample opportunity to study the value of trees of many kinds for ornamental planting, but the object lessons of enormous economic significance which will lie spread before their eyes will be blocks of planted forest in each of which has been set out one or more kinds of trees of commercial importance

By this course Letchworth Park will aid materially in laying an exact scientific basis for the successful extension of practical forestry in the United States. Every practical step will be taken, not only to insure results of the highest scientific value from forest work at Letchworth Park, but also to develop its usefulness as an object lesson to all park visitors."

I wish with all my heart that this object lesson were in its full fruition. But I do not need to say to foresters that forest trees grow slowly not fast. So possibly after five years, certainly in ten, the Letchworth Forest arboretum will have some useful forest lessons to teach; for by that time the little trees will be up in forest formation.

In the meantime we are making experiments with different species; and we are doing some things which will, and which will not, and which perhaps, may work! All men must do such things who would find out new and useful facts for the uses of other men.

I am hopeful that the Letchworth forest arboretum will be only a beginning. I wish to see such forest arboreta established in other regions of the United States; one for example, in the southeast, in the region of the southern pines; others in the Rocky mountains; others on the Pacific coast; and above all in the far southwest where trees are needed more than anywhere else in all America.

This then, is the central idea in the forest arboretum at Letchworth Park—to help so far as it can tree planters and therefore foresters to bring back trees successfully upon land where trees only can be profitably grown.

Just a word in closing this whole matter of forestry. I believe that there are in America no more useful citizens than foresters. I think there are no higher types of American citizenship than exemplified by great foresters. I see for the work, unless my vision is all wrong, a great and growing and a most productive future. Upon your zeal, upon your training, and upon your experience and that of other foresters, depends more than anything else the future of the forests of America. From the far-flung national forests, set among the great mountain ranges of the west, to the wood-lots and the timber tracts right here at home, lies your work. I hope that the future of the forests of America will be safe in the hands of American foresters.

SOME NEW AMERICAN LYTHRA.

BY J. A. NIEUWLAND.

Lythrum cordifolium nov. sp.

Planta glabra gracilis cum ramulis tenuibus permultis et foliis parvis ovatis crassiusculis omnibus magnitudinis aequalis circa 6-8 mm. longis et 2.5-4 mm. latis strictissime oppositis, apice acutis vel obtusiusculis, basi latissime cordatis vel rotundatis sessilibus, marginibus subaspere strigulosis; floribus perpaucis ad ramulorum apices oppositis, axillaribus subsessilibus, cum duobus bracteis linearibus sub hypanthio striato, 5 mm. longo. Calix breviter denticulatus vel fere edentatus, et sum appendicibus inter sepala longis recurvatis subulatis. Florum aliae partes ignotae.

Plant very slender glabrous with long slender branches, and numerous very small ovate cordate thickish leaves, about uniform in size and shape throughout, about 6-8 mm. long, 2.5-4 mm. wide strictly opposite, acute or obtusish at the apex and broadly cordate to rounded sessile at the base. Margins roughish strigulose. Flowers few aggregated near the ends of the slender branches axillary, opposite, subsessile with two small linear bracts below the hypanthium, which is ridged and about 5 mm. long. Calyx teeth very short, almost obliterated; intersepalar appendages or processes long, recurved, subulate. Other flower parts unknown as the specimen was in bud from which the description was made.

The specimen is rather young; the flowers not yet fully